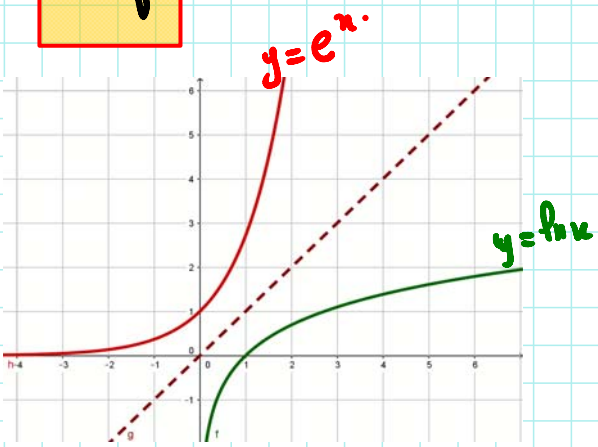
Fonction exponentielle

Déf

$f(x) = e^x$, $D_f = \mathbb{R}$, $\forall x \in \mathbb{R}, e^x > 0$



x	$-\infty$		$+\infty$
e^x	0	↗	$+\infty$

Signe $(ae^{U(x)} + b)$:

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- $e^x + 3 > 0 \quad \forall x \in \mathbb{R}$
- $-e^{-2x} - 1 < 0 \quad \forall x \in \mathbb{R}$
- $e^{-2x} - 2$?

$$e^{-2x} - 2 \geqslant 0 \Leftrightarrow e^{-2x} \geqslant 2 \Leftrightarrow -2x \geqslant \ln 2 \Leftrightarrow x \leqslant -\frac{\ln 2}{2}$$

x	$-\infty$		$-\frac{\ln 2}{2}$		$+\infty$
$e^{-2x} - 2$		$+$	0	$-$	

- $e^{2x} + 3e^x + 1 > 0 \quad \forall x \in \mathbb{R}$
- $e^{2x} + 2e^x - 3$?

$$e^{2x} + 2e^x - 3 = (e^x)^2 + 2e^x - 3 = 0$$

on pose $t = e^x \Rightarrow t^2 + 2t - 3 = 0$

$t = 1$ ou $t = -3$